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Comparison of Octreotide Scintigraphy and Conventional Imaging in Detection of Metastatic Medullary Thyroid Carcinoma Case Report

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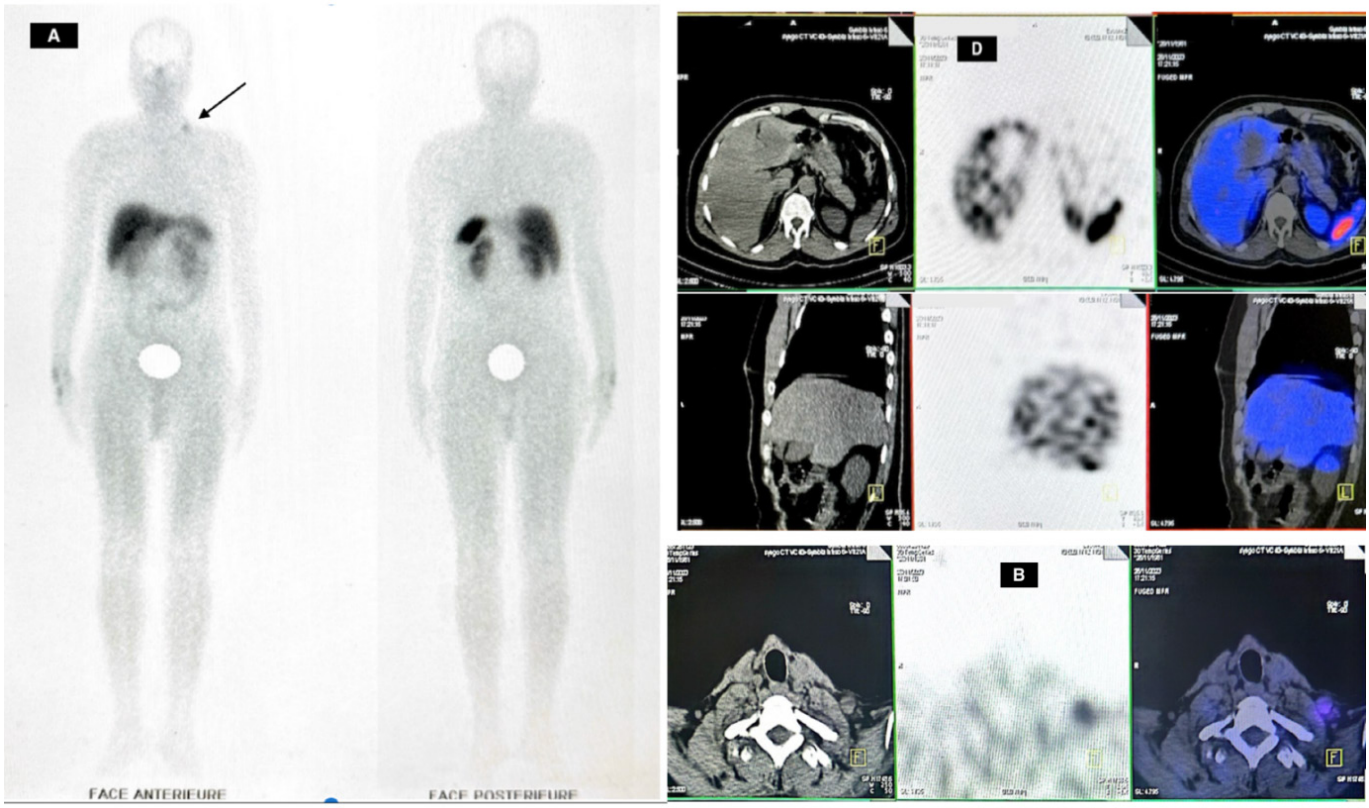

Figure 1: A 42-year-old patient with histologically proven MTC with no family history of multiple Endocrine Neoplasia type 2. Treatments included total thyroidectomy with lymph node dissection followed by chemotherapy. He presented at follow-up an increased calcitonin level >1240 ng/l. A cervico-thoraco-abdomino-pelvic scan revealed a centimetric supraclavicular adenopathy. In view of the radiobiological discrepancy, a 99mTc somatostatin receptor scan was performed. Whole-body anterior and posterior **(A)** scans were obtained 1 and 4 hours after injection of 333 Mbq using 99mTc- Tektrotyd. Neck, chest, abdominal and pelvic SPECT/CT was performed. The results showed high neck uptake corresponding to the supra-clavicular adenopathy (Narrow) **(B)**, with suspect heterogeneous hepatic uptake **(D)**. The investigation was completed by hepatic MRI showing hypodense liver lesions in segments III and IV associated with hepatic pedicle adenopathy. The histopathologic report confirmed involvement of the lymph nodes and liver lesions with MTC. The patient underwent a left hepatectomy with cervical lymphadenectomy. One month later calcitonin level was negative (<10 ng/l).

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Medullary Thyroid Carcinoma (MTC) is a rare neuroendocrine tumor arising from the parafollicular C cells of thyroid. It represents approximately 5% of all thyroid carcinomas. MTC is frequently aggressive and metastatic sites are generally cervical and mediastinal lymph nodes, lungs, liver, and bones. The initial treatment consists of a total thyroidectomy with bilateral neck lymph node and upper mediastinum

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dissection [1]. Somatostatin receptors are often over-expressed in Medullary Thyroid Carcinoma (MTC), the aim of our study was to evaluate the utility of scintigraphy with the somatostatin analogue 99mTc- Tektrotyd in metastatic MTC in comparison with other conventional imaging techniques. Nuclear imaging modalities are sensitive in detecting small amounts of residual or recurrent tumor at an early stage that may not be visible on conventional imaging, helping to guide treatment decisions and improve patient outcomes [2]. Normalization of serum calcitonin levels after surgery is a strong indicator that neoplastic tissue was totally removed.

Keywords: Metastatic medullary thyroid carcinoma, Octreotide scintigraphy, conventional imaging

Declaration of Patient Consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the legal patient has given his consent for images and other clinical information to be reported in the journal.

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Conflicts of Interest

There are no conflicts of interest.

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